

MONTANA

Wildlife

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Information-Education Division





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THE GOOD OLD DAYS?

To those who extol hunting in "the good old days," here is a letter from a man who was there:

State Fish and Game Commission
Helena, Montana

"Gentlemen:

There is probably a great deal of criticism about the game management of Montana, both from landowners who suffer from the carelessness of some sportsmen and the sportsmen who are not satisfied with the present supply of game. I can safely say that I have seen a great improvement in hunting conditions since I began this exhilarating sport some fifty years ago.

I lived along the Musselshell during those tender years and I took my .22 to school with me, hunting rabbits on the way home. If I got a rabbit I had meat in my lunch the next day. No rabbit, no meat. In those days, deer were almost unheard of and antelope were practically a myth. Now, from that same area a harvest of thousands of antelope is taken annually.

Even 30 years ago, bagging a mule deer buck was a feat requiring perseverance, skill, and a great deal of luck. I can remember hunting an entire season without seeing a deer in areas that are now heavily populated with them.

I have hunted and fished from one end of the state to the other, from the Yaak to the Rosebud, from the Big Dry to the Beaverhead. It would be difficult to say which is the greater sport, hunting antelope in the Badlands of eastern Montana where one can see his quarry—and it can see him—for miles or hunting majestic elk in the rugged Rockies in the western part of the state.

In my many years in the fields and woods, I have had many amusing experiences and some near tragic.

I enjoy recalling how I have stalked elk in the dense jungle of dead falls and jackpine and shot them in their beds and how I have crawled on my belly through sagebrush to bag an antelope before the herd was aware of my presence. But the morning two elk watched me eat my breakfast in broad daylight from a distance of about 50 yards and I never saw them—just their tracks—is one incident I am trying to forget. Nor the time I saw the big buck come across a sagebrush flat and I squatted behind a little fir until he was within 30 yards, put the bead on a spot on his throat, squeezed the trigger—MISSED!

Thanks to a well-managed game conservation program, we are enjoying better hunting than we were a generation ago, and if the interest of the public, the landowners, and the sportsmen can continue as at present, there is no reason why the coming generations cannot enjoy this same sport that has meant so much to us.

Yours very truly,

D. R. Nickerson,
Butte, Montana



Trail Trout

Series II—Birch Creek-Willow Creek-Rock Creek Drainage

By Robert C. Averett and Arthur N. Whitney, Fisheries Biologists

Since readers have expressed interest in fisheries survey work, we will briefly outline how information on "Trail Trout" is gathered.

Because of the great number of Montana's back country lakes and the relatively light fishing pressure on them, it is not economically feasible to survey a large number each year. Consequently, lake survey priorities are decided by the district fisheries manager in each fisheries district.

Managers must take into consideration a host of factors when deciding which lakes are to be worked.

Among considerations are: the importance of individual lakes to the over-all fisheries program; the history of a lake as a fishery; relative time in conducting the survey to other duties of the manager; and cost of the survey. The costs of mountain lake surveys are greater per area of water covered than most any other kind of fisheries survey work.

A typical high lake survey begins with a photography flight over a proposed area before ground survey crews are scheduled to go in for their work. An aerial photo of each lake provides ground crews with large

scale work maps for recording such pertinent information as: location of net sets, depth soundings, and spawning areas.

Pack horses, if necessary, camping gear and many light-weight modifications of regular survey gear must be assembled before the ground crew is ready to leave. Frequently, an additional day is required to pack in and set up camp. The crew is then ready to begin actual survey work.

Once ground crews reach a lake, their first job is to set gill nets in order to get a sample of the existing fish population. Fish caught in the gill nets are weighed, measured, and scale samples are removed for future age and growth analyses. Age and growth studies show how rapidly fish have grown in the past and

provide an excellent indication of the food supply and fertility of individual waters.

Fertility is as important to fish growth in water as it is to crop growth on land.

The lake is then sounded to determine depths and investigated for possible spawning areas. Water temperatures are taken at various depths and samples of water are bottled for total dissolved solids analyses. The lake size is then determined from an aerial photo by establishing a scale between points on the ground that are visible in the aerial photo. All of the above information, and much more, is recorded on a lake survey form. With duplicate copies in Helena and in district offices, nothing is left to memory.



With lake survey equipment mantied, Tommy Schurr is ready to head into high country.

—Photo by Tom Smith, Montana Fish & Game Dept.

The course of the Big Hole River from its headwaters to confluence with the Beaverhead partially encircles some of the most rugged mountain country in Montana—the Pioneer Mountains—and within them lie many mountain lakes.

During the summer of 1958 a Montana Fish and Game fisheries field crew surveyed twelve of the high lakes. Although there are many more lakes in the Pioneers, these twelve were given top priority for an immediate survey. Six were located in the Birch Creek drainage, two in the Willow Creek drainage, and four in the Rock Creek drainage.

Jutting rock cliffs enclose the 10,000-foot high Chan, Tub, and Anchor lakes perched on top of the **Birch Creek drainage**. In this lofty region, whitebark and limber pine keep company with the wind. Deposits in the lake beds are primarily decomposed granite and animal life is virtually absent. Each lake has a dam at its outlet and the water is drawn down during late summer.

No fish were taken by gill net sets in Chan, Tub, or Anchor Lakes, although the latter has been planted by the Montana Fish and Game Department in recent years. Because of their alpine position and water drawdown, it is unlikely that the lakes will support a worthwhile fishery, even though they are aesthetically tops. They are also accessible by foot trail from the end of Birch Creek-Pear Lake Road.

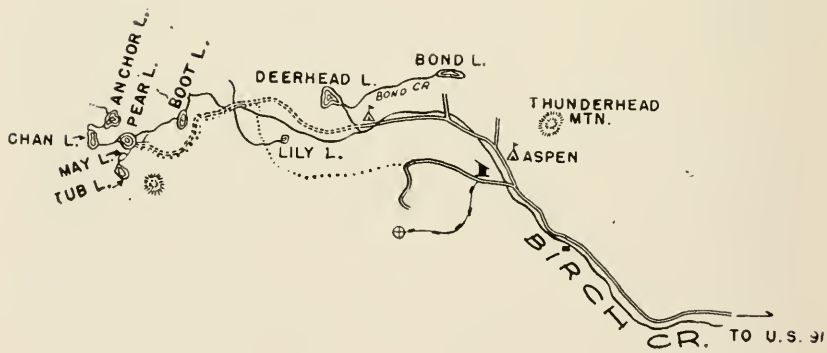
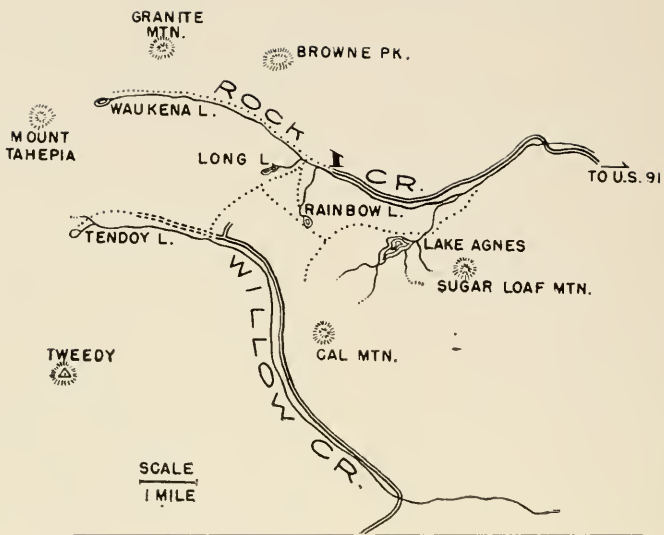
Further down the Birch Creek drainage, May, Pear and Boot Lakes

are all accessible from the Birch Creek-Pear Lake Road, and during dry weather can be reached in a two-wheel drive vehicle. May Lake is a shallow impounded body of water of about five surface acres and is not considered worthy of fishery management because of its shallow depth and small size.

Both Pear and Boot Lakes are impounded, but are large and deep enough to support fish throughout the year. However, they have no spawning areas and must receive periodic trout stocking by the Montana Fish and Game Department. Gill net catches and angler contacts indicate that Pear Lake contains mostly cutthroat trout, while Boot Lake boasts cutthroat, rainbow and grayling. Campsites are located on the shores of both Boot and Pear Lakes.

Although Deerhead and Bond Lake lie in the **Willow Creek Drainage**, they can be reached by a spur road from the Birch Creek Road. The road leading to Deerhead and Bond Lakes is in rather poor condition and a truck type vehicle is recommended.

Deerhead Lake, rimmed by dog-hair growths of lodgepole pine and profuse with water plants, is one of the most fertile bodies of water in the area. This lake contains some large cutthroat trout and though it is impounded, it is large and fertile enough to support a good amount of fish. Because of its accessibility, fertility—but lack of spawning areas—Deerhead Lake was planted with 4,000 cutthroat trout fry in 1959.





In this type of rugged back country, mechanical contrivances are still bested by pack horses.

—Photo by Tom Smith, Montana Fish & Game Dept.

Bond Lake, like most lakes surveyed in the Pioneer Mountains, is also impounded. It contains an excellent population of eastern brook trout. Because of this good quantity of eastern brook, Bond is not scheduled for an immediate fish plant.

Lakes surveyed in the **Rock Creek drainage** were Agnes, Rainbow and Waukena.

Sky-blue Lake Agnes is a large body of impounded water that hosts one of the finest grayling fisheries in Montana. The unique game fish are so abundant that our Fish and Game Department periodically maintains a grayling spawn taking station there during early spring. Grayling taken during the survey ran upwards to 15 inches in length. Agnes Lake is accessible by trail or road.

Rainbow Lake is a small, fertile body of water lying above and to the west of Agnes Lake. This little lake is accessible over an excellent trail from the end of the Rock Creek Road, and although no fish were taken in the gill nets during the survey, it was deemed worthy of continued fishery management. During the summer of

1959 it was stocked with 4,000 cut-throat trout fry.

Waukena Lake lies near the top of the Rock Creek drainage. This sub-alpine lake is quite large with a maximum depth of over 30 feet and is impounded with a headgate-controlled dam on its outlet. About a two-hour pack trip from the end of the Rock Creek Road will put the angler on this water.

Because Waukena is easy to get to and is deep enough to support fish throughout the year, it was planted with 6,000 rainbow trout fry during the summer of 1959. Given time to grow, and if the plant takes, Waukena Lake should provide some fine trout fishing in future years.

Waukena Lake concludes this report, but more areas will follow in the Trail Trout series as our mountain lake survey work progresses with each field season. If this brief account of a few lakes in the Pioneer Mountains has aroused your interest, why not try your luck on some of them the next time you are in the Big Hole country?



HOW BIG GAME SEASONS ARE SET

By Fletcher Newby, State Big Game Manager

Montana topped the list as a big game hunter's paradise in 1958—so shows a recent report by the U. S. Department of the Interior, Bureau of Sports Fisheries and Wildlife.

Montana hunters took the most big-horn sheep, mountain goats and grizzly bears. In fact, the Treasure State was unique among all the 48 for providing the only grizzlies to hunters. Here, nearly twice as many goats were bagged as in all other states combined. Montana ranked second only to Idaho in elk harvest and second to Wyoming in total harvest of antelope and moose. Deer hunters took more deer in Texas, Utah and Oregon, but our hunters enjoyed a higher percentage of success than

any of the three. Sportsmen out for black bear found better hunting only in Washington, Idaho, Michigan and Maine.

We exceeded all states in total harvest of all species with 140,000 big game animals bagged. Runner-up was Texas with a take of 129,500.

Measured by the old proverb "The proof of the pudding is in the eating," Montana's big game management program would seem to be an outstanding success. However successful, the fact remains that the program is often the object of heated controversy. We shot too many! We shot too few! It all depends on your viewpoint.

Public agencies such as the Fish and Game Department must always operate within limits set by public opinion. Unfortunately, public opinion formed in the absence of good solid facts is sometimes based upon hearsay. This means that the department has a serious responsibility for getting information to the people. To help fulfill this responsibility, the Montana Fish and Game Department is giving wide distribution and publicity to their season setting schedule. This should be a big step toward gaining better public understanding of the department's work.

In an article "Conservation Biology—Facts and Fallacies," Dr. Durward Allen, noted authority on wildlife management, lists the steps that must be followed to attain a sound conservation program. The steps are: 1. research, 2. information, 3. management. Research, the systematic search for facts, provides the foundation for the entire program.

When enough facts regarding a problem have been collected, a course of action can be decided upon. Then public support for the action must be gained. All news facilities—radio, TV, newspapers, publications, and personal contact must be utilized to carry the story to everyone. This is step 2—information. Only when public support is secured can the program of informed action (management) be effectively pursued.

How well does Montana's big game management program follow these steps? Let's look first at research.

Who are the research men? Game biologists—men trained to scientifically conduct studies of game herds and habits. Also, most of these men have years of field experience behind them. Montana's 20 game biologists who work year-round in the field possess the considerable total of 110 years practical experience in wildlife management backed up by formal wildlife science education in colleges and universities.

What are these studies that game biologists pursue so persistently? Research projects take many forms. Life history studies deal with the intimate details of the private lives of big game animals while other studies are aimed at developing new techniques or refining existing ones. The management investigations we are most concerned with here involve the measurement of three important items.

1. Food Supply. Adequate forage must be maintained on winter ranges. Range surveys measure the condition and the trend toward improvement or deterioration of winter ranges vital to game herds.
2. Population Welfare. Surveys must reflect changes in numbers, not total numbers (most game herds are impossible to count with existing techniques) but whether over-all numbers tend to be increasing or decreasing. Classification counts (cow-calf, doe-fawn ratios) tell how the annual production and survival of young is progressing.



Trips afield that include sportsmen and department personnel provide information that often leads to better understanding of department policies.

3. Hunter Harvest. Checking stations and mail questionnaires supply the answers here. Compilation and analysis of this information requires the use of higher mathematics and electronic business machines.

How does the information program operate? The formal job of getting out information is carried on by the Information and Education Division through news stories, newspaper feature articles, direct correspondence, bulletins, movies, TV programs and public speaking. All department employees participate in the less formal aspects of the program by speaking at meetings and by answering questions in their daily work.

What is meant by "management?" Management is the climax of step 1 and 2. It is the action program where research findings are applied. Big game management has two major objectives: First, to give hunters the chance to bag a big game animal in a sporting manner under pleasing conditions and, second, to maintain big game herds which are in balance with their food supply and compatible with other uses of the land. An-

rual crops of big game must be used as they are produced. When too many animals are carried, winter food plants are used up and game is lost to malnutrition, disease and predators. When over-populations exist year after year plants and soil become damaged and depleted to the point where smaller and smaller crops of game are produced. Many of Montana's winter ranges fall into this depleted category. In past years, the few game managers there were had too much country to cover. As a result, they were armed with too few facts and public support for progressive management was slow in coming. Too much interest was turned to antlers instead of bushes when season-setting time came around. Montanans do, however, owe a lasting debt of gratitude to the many well-informed, progressive sportsmen who helped to bring about sound management programs.

We can best demonstrate how the functions of research, information and management are merged to produce sound big game seasons by following the progress of season-setting month by month.

The annual cycle begins with December. Each activity is identified as to function by a prefix **(R)**—research, **(I)**—information, **(M)**—management.

DECEMBER:

- (R)** Checking station information is compiled.
- (R)** Postseason classification counts begin on big game to categorize animals in age, sex and classes.
- (R)** Distribution of game on winter ranges is checked by ground and air. Bighorn sheep population trend counts are made.
- (I)** Information releases on checking station data and season extensions.
- (R)** Antelope hunter questionnaires mailed.
- (R)** Range surveys to determine winter forage use begin.
- (R)** Winter mortality studies begin.
- (M)** Seasons for antelope, moose, mountain goat and bighorn sheep are considered in meetings of department personnel.
- (R)** Returns from mail questionnaires are compiled and analysis begins.
- (I)** Information releases on opening dates and area boundaries, range surveys, winter losses and special seasons.

JANUARY:

- (R)** Mail questionnaires go out to all types of hunters including non-residents.
- (R)** Classification counts continue.
- (R)** Distribution of game on winter ranges is checked by ground and air.
- (R)** Compilation of checking station information is completed.
- (R)** Returned antelope hunter questionnaires are analyzed.
- (M)** Opening dates and hunting area boundaries are considered in meetings of department personnel.
- (I)** Information releases on mail survey and wintering conditions.
- (R)** Distribution surveys continue.
- (R)** Classification counts continue.
- (R)** Range surveys continue.
- (R)** Mortality studies may continue.
- (R)** Analysis of mail survey is completed.
- (M)** Commission sets final antelope, moose, mountain goat and bighorn sheep seasons and tentative quotas.
- (M)** Special season map and regulations submitted to printer.
- (I)** Information releases on results of mail survey and special big game seasons.

APRIL:

FEBRUARY:

- (M)** Opening dates and hunting area boundaries are considered in meetings of department personnel and proposed to the fish and game commission.
- (R)** Classification counts continue.
- (R)** Distribution on winter ranges is checked. Population trend counts may be made.
- (I)** Information releases on wintering conditions, opening dates and area boundaries.

MARCH:

- (M)** Recommendations and suggestions received from cooperators are reviewed and presented to commission with final department proposals.
- (M)** Commission sets final opening dates and hunting area boundaries for all big game species.
- (R)** Classification counts continue.
- (R)** Distribution on winter ranges is checked by ground and air. Population trend counts may be made.

MAY:

- (R)** Distribution surveys completed.
- (R)** Classification counts completed.
- (R)** Range surveys completed.
- (R)** Mortality studies completed.
- (R)** Findings from all surveys compiled and analyzed to guide discussions of season lengths and bag limits at meetings of department personnel and at meetings with land management agencies.
- (M)** Season lengths and bag limits for elk and deer are proposed to the Fish and Game Commission.
- (I)** These proposals are sent to sportsmen's clubs and other interested groups.
- (I)** Information releases on results of surveys and season proposals.

LATE MAY—EARLY JUNE:

- (I)** Meetings are set up throughout the state to explain the basis and purpose of big game seasons. Representation is invited



Annual crops of big game must be used as they are produced.

When too many animals are carried winter food plants are used up.

from sportsmen, livestock associations, other state and federal agencies and other interested groups and individuals.

JUNE:

- (R) Emphasis of field work turns to game bird investigations.
- (M) Commission sets final elk and deer bag limits and season closing dates.
- (M) Big game hunter map submitted to printer.
- (I) Special season maps are distributed.
- (I) Meetings and information releases to explain seasons and regulations continue.

JULY:

- (R) Antelope census begins.
- (R) Emphasis of field work on game bird investigations.

AUGUST:

- (R) Preseason classification counts begin.
- (R) Grass condition and trend surveys begin.
- (I) Big game hunter maps are distributed.

SEPTEMBER:

- (R) Preseason classification counts continue.
- (R) Grass condition and trend surveys continue.
- (R) Forage use studies begin on multiple-use ranges.
- (M) Antelope seasons and other early big game seasons open.
- (R) Field checks on early-season hunter activity begin.
- (R) Checking stations are set up for antelope and other early big game seasons.

OCTOBER:

- (M) General big game seasons open.
- (R) Checking station operations continue.
- (R) Field checks of hunter activity continue.



- (R) Grass condition and trend surveys are completed.
- (R) Forage utilization studies on multiple-use ranges are completed.
- (M) Quotas for special elk drawings are set.
- (I) Information releases on hunting season progress announcement of quotas for drawings.

NOVEMBER:

- (R) Checking station operations continue.
- (R) Field checks of hunter activity continue.
- (M) General big game season closes.
- (M) Recommendations for extended seasons made where necessary.
- (I) Information releases on hunting season progress and season extensions.

And game is lost to malnutrition, disease and predators.



The mechanics of preparing season recommendations often are not clearly understood. This lack of understanding has been the source of much confusion and controversy.

After game managers and biologists have compiled and interpreted findings of the various management investigations, department personnel meet in the seven administrative districts. At this point the observations and suggestions of game wardens and other personnel also are taken

advantage of. The district game manager then prepares the formal recommendations for the season in question. He bases these recommendations on the data gathered by surveys and other reliable sources of information. The formal recommendations are adopted by the district staff as the best course to follow in carrying out sound game management. If any department personnel do not agree with the formal recommendations they may submit independent recommendations through channels.

The formal recommendations are submitted to the chief of game management. He is assisted by the state big game manager in merging the formal recommendations from the seven administrative districts into a workable statewide program. This formal statewide program is then proposed to the Fish and Game Commission. The commission tentatively adopts the recommendations with such changes as they may desire. After the proposed seasons and regulations have been approved by the commission, they are given wide distribution and publicity. They are

explained at meetings with sportsmen, stockmen, personnel of other agencies and other interested persons.

At its subsequent meeting the Fish and Game Commission again considers the formal recommendations in the light of expressed public opinion. Where public support has not been secured for a certain recommendation, the commission in its judgment may effect a compromise action or otherwise resolve the matter. Usually public support for the formal recommendations is secured and they are enacted into final seasons and regulations.

Game managers sometimes have been called "dictatorial" for their uncompromising attitude in the preparation of formal recommendations. The necessity for this attitude perhaps has not been adequately explained. Game managers are instructed to base their recommendations upon scientific data. These recommendations are prepared only

with the two objectives of big game management, recreation and balancing of herds against food supplies, and land use, in mind. **At this point,** public opinion is not a factor. This does not mean that the game manager is not aware of his responsibility to explain his program and to be alert and responsive to public opinion.

Formal recommendations based upon factual information on big game food supplies, herd welfare and harvest must be available for the information of the Fish and Game Commission. If these recommendations are compromised with some segment of public opinion at local levels, the commission cannot be expected to arbitrate wisely at the statewide level.

Big game seasons based upon facts gathered by careful study and supported by an informed public will insure that Montana will continue to lead the nation as a big game hunter's paradise.



—Photo by Lloyd Casagrande, Mont. Fish & Game Dept.

The Grizzly - **FABLED GIANT OF WESTERN HISTORY**

By
Michael Kennedy, Acting Director
Historical Society of Montana

Although historians now generally agree that Henry Kelsey, a literate early-day Hudson's Bay trader and trapper, made reference to a fierce and brutish type of Canadian bear—now known to be the grizzly—as early as 1691, more than a century had to pass before more explicit details came to light about this huge and dangerous animal.

Captains Lewis and Clark in their valiant 19th century expedition which opened much of the Northern Great Plains and Northern Rocky Mountain regions to exploration and fur

trading are acknowledged to have produced the first authentic information on record for eager Americans concerning this formidable beast. Since their journals and reports were not published until some years later, the people of the Americas actually waited for some time after the great 1804-06 expedition before they became fully cognizant of such an animal as the grizzly.

The official Lewis and Clark records were restricted to scientists and others—and only a handful of others—for a rather long period, into the

first quarter of the 19th century. And so it came to pass that the people of America had their appetite first whetted by tales of the formidable grizzly only after word began to filter back to "civilization" of the daring adventures of that group known to history as the mountain men, the early explorers - trappers - traders - adventurers of the western wilderness. The first significant news stories in eastern newspapers followed the launching of the exciting General William Ashley fur-hunting expeditions from St. Louis, which from 1823-25 sent such valiants as Jim Bridger, Hugh Glass, the Sublettes, David Jackson, Brokenhand Fitzpatrick, Seth Grant and Jedediah Smith to trap vast expanses of wild country along the Missouri, Big Horn, Platte, Green, Wind and Sweetwater rivers—even into the uncharted reaches of the Columbia and the Snake.

The pulp writers of the day, even the good literary journals and certainly all of the newspapers, had their first big journalistic breakthrough when Hugh Glass managed to get mangled by a savage she-grizzly.

There are many accounts in American journalism, literature and history — mostly inaccurate, fanciful (and some even ridiculous)—of the Hugh Glass incident. Even an epic poem, beautifully done, "The Song of Hugh Glass," in recent years has graced the episode! But one of the most fascinating early accounts is given here, because it illustrates the

world-wide interest that suddenly developed on the subject of the North American grizzly.

This account appeared in a book, avidly read in England, Germany, France and in most other parts of the world, before it was republished in the United States. It was written by George Frederic Ruxton, an adventurer if ever there was one. George Ruxton was a precocious youth. Expelled from the Royal British Military Academy at 15, he became a soldier of fortune in Spain in 1836. At 17 he wore the Cross of San Fernando and was a Spanish knight. Then, as an Irish lieutenant he fought in the early Indian Wars in Canada and then explored the deserts of Morocco and the jungles of South Africa. When only 25 he turned up in Mexico and the Rocky Mountain region of the United States to write scholarly but exciting accounts of ethnology and geography and became known to a wide field of readers of the day as "Ruxton of the Rockies," because of his many articles and his widely read book "Life in the Far West." The story of Hugh Glass was still fresh in the minds of many mountain men, a score of whom were interviewed by the mercurial English journalist. This is what he wrote of Hugh Glass in 1847:

"The grizzly bear is the fiercest of the *ferae naturae* of the mountains. His great strength and wonderful tenacity of life render an encounter with him anything but desirable, and therefore it is a rule with the Indians



The shoulder hump is a typical grizzly characteristic.

—Photo by Lloyd Casagrande, Mont. Fish & Game Dept.

and white hunters never to attack him unless backed by a strong party. Although, like every other wild animal, he usually flees from man, yet at certain seasons, when maddened by love or hunger, he not infrequently charges at first sight of a foe, when, unless killed dead, a hug at close quarters is anything but a pleasant embrace, his strong hooked claws stripping the flesh from bones as easily as a cook peels an onion. Many are the tales of bloody encounters with these animals which the trappers delight to recount to the greenhorn, to enforce their caution as to the foolhardiness of ever attacking the grizzly bear.

"Some years ago a trapping party was on their way to the mountains, led, I believe, by old Sublette, a well-known captain of the West.

Amongst the band was one John (Hugh) Glass, a trapper who had been all his life in the mountains, and had seen, probably, more exciting adventures, and had had more wonderful and hair-breadth escapes, than any of the rough and hardy fellows who make the West their homes, and whose lives are spent in a succession of perils and privations. On one of the streams running from the Black Hills, a range of mountains northward of the Platte, Glass and a companion were one day setting their traps, when, on passing through a cherry thicket which skirted the stream, the former, who was in advance, descried a large grizzly bear quietly turning up the turf with his nose, searching for yampa roots or pig nuts, which there abounded. Glass immediately called his com-

panion, and both proceeding cautiously, crept to the skirt of the thicket, and taking steady aim at the animal, whose broadside was fairly exposed at the distance of twenty yards, discharged their rifles at the same instant, both balls taking effect, but not inflicting a mortal wound. The bear, giving a groan of pain, jumped with all four legs from the ground, and seeing the wreaths of smoke hanging at the edge of the brush, charged at once in that direction, snorting with pain and fury.

"'Harraw, Bill!' roared out Glass, as he saw the animal rushing towards them, 'we'll be made meat of as sure as shootin!' and leaving the tree behind which he had concealed himself, he bolted through the thicket, followed closely by his companion. The brush was so thick that they could scarcely make their way through, whereas the weight and strength of the bear carried him through all obstructions, and he was soon close upon them.

"About a hundred yards from the thicket was a steep bluff, and between these points was a level piece of prairie. Glass saw that his only chance was to reach this bluff, and shouting to his companion to make for it, they broke from the cover and flew like lightning across the open space. When more than half way across, the bear being about 50-yards behind them, Glass, who was leading, tripped over a stone and fell to the ground, and just as he rose to his feet, the beast, rising on his hind feet, confronted him. As he closed,

Glass, never losing his presence of mind, cried to his companion to load up quickly, and discharged his pistol full into the body of the animal, at the same moment that the bear, with blood streaming from its nose and mouth, knocked the pistol from his hand with one blow of its paw, and fixing its claws deep into his flesh, rolled with him to the ground.

"The hunter, notwithstanding his hopeless situation, struggled manfully, drawing his knife and plunging it several times into the body of the beast, which, furious with pain, tore with tooth and claw the body of the wretched victim, actually baring the ribs of flesh and exposing the very bones. Weak with loss of blood, and with eyes blinded with the blood which streamed from his lacerated scalp, the knife at length fell from his hand, and Glass sank down insensible, and to all appearance dead.

"His companion, who up to this moment, had watched the conflict, which however, lasted but a few seconds, thinking that his turn would come next, and not having had presence of mind even to load his rifle, fled with might and main back to camp, where he narrated the miserable fate of poor Glass. The captain of the band of trappers, however, dispatched the man with a companion back to the spot where he lay, with instructions to remain by him if still alive, or to bury him if, as all supposed he was, defunct, promising them at the same time a sum of money for so doing.

"On reaching the spot, which was red with blood, they found Glass still breathing, and the bear, dead and stiff, actually lying upon his body. Poor Glass presented a horrifying spectacle: the flesh was torn in strips from his chest and limbs, and large flaps strewn the ground; his scalp hung bleeding over his face, which was also lacerated in a shocking manner.

"The bear, besides the three bullets which had pierced its body, bore the marks of the fierce nature of Glass's final struggle, no less than twenty gaping wounds in the breast and belly testifying to the gallant defense of the mountaineer.

"Imagining that, if not already dead, the poor fellow could not possibly survive more than a few moments, the men collected his arms, stripped him even of his hunting shirt and moccasins, and merely pulling the dead bear off the body, mounted their horses and slowly followed the remainder of the party, saying, when they reached it, that Glass was dead, as probably they thought, and that they had buried him.

"In a few days the gloom which pervaded the trappers' camp, occasioned by the loss of a favourite companion, disappeared and Glass's misfortune, although frequently mentioned over the campfire, at length was almost entirely forgotten in the excitement of the hunt and Indian perils which surrounded them.

"Months elapsed, the hunt was over, and the party of trappers were

on their way to the trading fort with their packs of beaver. It was nearly sundown, and the round adobe bastions of the mud-built fort were just in sight, when a horseman was seen slowly approaching them along the banks of the river. When near enough to discern his figure, they saw a lank cadaverous form with a face so scarred and disfigured that scarcely a feature was discernible. Approaching the leading horsemen, one of whom happened to be the companion of the defunct Glass in his memorable bear scrape, the stranger, in a hollow voice, reining in his horse before them, exclaimed, 'Harrow, Bill, my boy! You thought I was gone under that time, did you? But hand me over my horse and gun, my lad; I ain't dead yet by a dam sight!'

"What was the astonishment of the whole party, and the genuine horror of Bill and his worthy companion in the burial story, to hear the well-known, though now much altered, voice of John Glass, who had been killed by a grizzly bear months before, and comfortably interred, as the two men had reported, and all had believed!

"There he was, however, and no mistake about it; and all crowded round to hear from his lips, how after the lapse of he knew not how long, he had gradually recovered, and being without arms, or even a butcher knife, he had fed upon the almost putrid carcass of the bear for several days, until he had regained sufficient strength to crawl, when,



Though grizzlies will usually evade encounters with humans, they will occasionally attack. To molest cubs is an outright invitation to disaster.

—Photo by Lloyd Casagrande, Mont. Fish & Game Dept.

tearing off as much of the bear's meat as he could carry in his enfeebled state, he crept down the river, and suffering excessive torture from his wounds and hunger and cold, he made the best of his way to the fort, which was some 80 or 90 miles from the place of his encounter with the bear, and living the greater part of the way upon roots and berries, he after many, many days arrived in a pitiable state, from which he had now recovered, and was, to use his own expression, 'as slick as a peeled onion.'

"A trapper on Arkansa, named Valentine Herring, but better known as 'Old Rube,' told me that once, when visiting his traps one morning on a stream beyond the mountains, he found one missing, at the same time that he discovered fresh bear 'sign' about the banks. Proceeding down the river in search of the lost trap, he heard the noise of some large body breaking through the thicket of plum bushes which belted the stream. Ensconcing himself behind a rock, he presently observed a huge grizzly bear emerge from the bush and limp on three legs to a flat rock, which he mounted, and then quietly seat-

ing himself, he raised one of his forepaws, on which Rube, to his amazement, discovered his trap tight and fast.

"The bear, lifting his iron-gloved foot close to his face, gravely examined it, turning his paw round and round, and quaintly bending his head from side to side, looking at the trap from the corners of his eyes, and with an air of mystery and puzzled curiosity, for he evidently could not make out what the novel and painful appendage could be, and every now and then smelt it and tapped it lightly on the rock. This, however, only paining the animal the more, he would lick the trap, as if deprecating its anger and wishing to conciliate it.

"After watching these curious antics for some time, as the bear seemed inclined to resume his travels, Rube, to regain his trap, was necessitated to bring the bear's cogitations to a close; and levelling his rifle, shot him dead, cutting off his paw and returning with it to camp, where the trappers were highly amused at the idea of trapping a b'ar.

"Near the same spot where Glass encountered his 'scrape,' some score of Sioux squaws were one day engaged in gathering cherries in a thicket near their village, and had already nearly filled their baskets, when a bear suddenly appeared in the midst, and with a savage growl, charged amongst them. Away ran the terrified squaws, yelling and shrieking out of the shrubbery, nor stopped until safely ensconced within their lodges. Bruin, however, preferring fruit to meat, albeit of tender squaws, after routing the petticoats, quietly betook himself to the baskets, which he quickly emptied and then quietly retired.

"Bears are exceedingly fond of plums and cherries, and a thicket of this fruit in the vicinity of the mountains is, at the season when they are ripe, a sure find for Mr. Bruin. When they can get fruit they prefer such food to meat, but are, nevertheless, carnivorous animals . . ."

As a contemporary writer, Ruxton made a few fundamental errors. The grizzly was a female with cub, and if Jim Bridger is to be believed at all (he was notorious, of course, for his tall tales), some of the human flesh of Hugh Glass was devoured by the cub, who later disappeared. Like the Custer Battle, historians still quibble over whether Glass was abandoned in cold blood, although not quite dead, and was deliberately robbed by his companions of his knife, gun, clothing and other gear. This is disputable but there is no doubt that Glass, when he later emerged from

the dead at Fort Kiowa (having crawled most of the way from the region near the confluence of the Yellowstone and Missouri rivers, where the event actually took place) had only one thought in mind—revenge! He had lived, he later told the startled men at Andrew Henry's new post at the mouth of the Big Horn, where he went after recovering his strength at Fort Kiowa, only for the purpose of killing Jim Bridger and the trapper known only as Fitzgerald (not Sublette) who had left him to die after the savage attack by the grizzly. But by this time, Glass was so glad to be alive that he forgot about the revenge and actually was a good friend of Bridger's until his (Glass') death at the hands of Blackfeet marauders on the Upper Yellowstone in the early spring of 1833.

Another of many other true mountain men stories (this one discovered by Bernard De Voto) has to do with "Baldy" Markhead; although other writers have attributed it as having happened to Joe Meek, another wild mountain man. We'll assume that it was Markhead, because for a decade thereafter he roamed the Rockies, scalped as bald as a billiard ball by a grizzly. Unlike most men of the period he had not learned to respect the species. He followed a giant grizzly into a thicket, boasting that he would kill it with nothing but his belt-axe. When Markham did not return, his companions found him savagely mangled, but breathing, part of his face and all of his scalp completely severed from his body,

the axe in his bloody hand and no grizzly in sight. Markhead was probably the last mountain man to bother with a grizzly, except under the most extenuating of circumstances such as cornered and fighting for his life. Most of them, brave as they were, gave Mr. Grizzly a wide berth; as did the gold seekers, freighters, cowmen and other sturdy westerners who came in later years when the grizzly was still numerous.

All of this is strange in retrospect because one of the most profound of all the great discoveries made by Lewis and Clark concerned the savagery of the grizzly. Their journals and reports repeatedly stressed that the grizzly was to be avoided at all costs; that it was the most savage of all the wild animals that roamed this wilderness. Even some members of Ashley's expedition must have read some accounts of the bear from published reports of the Lewis and Clark expedition, which after 1825 were gaining wide circulation among the reading public!

Yet, oddly enough (or perhaps it was not strange, because they knew nothing whatsoever of the animal) the first accounts in the Lewis and Clark "Journals" did not report the grizzly as such. He was simply a different kind of "brown or yellow bear." The first mention of any, comes in the handwriting of Lewis, dated April 29, 1805 after the winter

in the Mandan villages when the expedition was then moving along the Missouri between the mouth of the Yellowstone and the Musselshell. Here are Lewis' own words, recounting the incident, with footnote by the eminent DeVoto, (other passages relating to the "Grisley Beare," as noted by the expedition on Montana soil, follow):

"I walked on shore with one man. About 8 a. m. we fell in with two brown or yellow bear;¹ both of which we wounded; one of them made his escape, the other after my firing on him pursued me seventy or eighty yards, but fortunately had been so badly wounded that he was unable to pursue me so closely as to prevent my charging my gun; we again repeated our fir(e) and killed him. It was a male not fully grown, we estimated his weight at 300 lbs. not having the means of ascertaining it precisely. The legs of this bear are somewhat longer than those of the black, as are its tallons and tusks incomparably larger and longer. The testicles, which in the black bear are placed pretty well back between the thyres and contained in one pouch like those of the dog and most quadrupeds, are in the yellow or brown bear placed much further forward, and are suspended in separate pouches from two or four inches asunder, it's colour is yellowish brown, the eyes small, black and piercing;

¹A grizzly, the first one. Lewis presently loses his easy superiority, the result of the ease with which this one was killed. His erroneous statement that the grizzly's testicles are provided separate individual scrota, which he later repeats, is inexplicable. Though far from being the first description of a grizzly as some texts have said, this is the first detailed one. Henry Kelsey, in 1691, was probably the first white man to see a grizzly.



Bears have a limited range of vision when it comes to seeing objects on either side. Consequently, they will often sit or stand up and swing their heads in order to detect the source of some sound or smell.

Photo by Lloyd Casagrande, Mont. Fish & Game Dept.

the front of the fore legs near the feet is usually black; the fur is finer thicker and deeper than that of the black bear. these are all the particulars in which this animal appeared to me to differ from the black bear; it is a much more furious and formidable animal, and will frequently pursue the hunter when wounded. it is astonishing to see the wounds they will bear before they can be put to death. the Indians may well fear this animal equipped as they generally are with their bows and arrows or indifferent fuzees, but in the hands of skillful riflemen they are by no means as formidable or dangerous as they have been represented.

"game is still very abundant we can scarcely cast our eyes in any direction without perceiving deer Elk Buffalo or Antelopes. The quantity of wolves appear to increase in the

same proportion; they generally hunt in parties of six eight or ten they kill a great number of the Antelopes at this season; the Antelopes are yet meagre and the females are big with young; the wolves take them most generally in attempting to swim the river; in this manner my dog caught one drowned it and brought it on shore; they are but clumsy swimmers, tho' on land when in good order, they are extremely fleet and durable. we have frequently seen the wolves in pursuit of the Antelope in the plains; they appear to decoy a single one from a flock, and then pursue it, alternately relieving each other until they take it. on joining Capt Clark he informed me that he had seen a female and faun of the bighorned animal; that they ran for some distance with great apparent ease along the side of the river bluff where it was almost perpendicular:

two of the party fired on them while in motion without effect. we took the flesh of the bear on board and proceeded. Capt. Clark walked on shore this evening, killed a deer, and saw several of the bighorned animals" . . ."

"5th of May Sunday 1805 We set out verry early and had not proceeded far before the rudder irons of one of the Perogus broke which detained us a short time Capt Lewis walked on shore this morning and killed a Deer, after brackfast I walked on shore Saw great numbers of Buf-falow & Elk Saw also a Den of young wolves and a number of Grown Wolves in every direction, The Countrey on both sides is as yesterday handsom & fertile. The river rising & current Strong & in the evening we saw a Brown or Grisley beare on a sand beech, I went out with one man Geo Drewyer & Killed the bear, which was verry hard to kill we Shot ten Balls into him before we killed him, & 5 of those Balls through his lights This animal is the largest of the carnivorous kind I ever saw . . ."

(Lewis) "Sunday May 5th 1805 it was a most tremendous looking animal, and extreemly hard to kill notwithstanding he had five balls through his lungs and five others in various parts he swam more than half the distance across the river to a sandbar & it was at least twenty minutes before he died; he did not attempt to attack, but fled and made the most tremendous roaring from the

moment he was shot. We had no means of weighing this monster; Capt. Clark thought he would weigh 500 lbs. for my own part I think the estimate too small by 100 lbs. he measured 8 Feet 7½ Inches from the nose to the extremety of the hind feet, 5 F. 10½ Ins. arround the breast, 1 F. 11. I. arround the middle of the arm, & 3 Ft. 11 I. arround the neck; his tallons which were five in number on each foot were 4-¾ inches in length. he was in good order, we therefore divided him among the party and made them boil the oil and put it in a cask for future uce; the oil is as hard as hogs lard when cool, much more so than that of the black bear. This bear differs from the common black bear in several respects; it's tallons are much longer and more blunt, it's tale shorter, it's hair which is of a redish or bey brown, is longer thicker and finer than that of the black bear; his liver lungs and heart are much larger even in proportion with his size; the heart particularly was as large as that of a large Ox. his maw was also ten times the size of black bear, and was filled with flesh and fish.

"The party killed two Elk and a Buffaloe today, and my dog caught a goat, which he overtook by superior fleetness, the goat it must be understood was with young and extreemly poor.

"Monday May 6th 1805 saw a brown (grizzly) bear swim the river above us, he disappeared before we can get in reach of him; I find that

²The bighorn or Rocky Mountain sheep. Its meat was one of the great delicacies of the West.

the curiossity of our party is pretty well satisfied with respect to this animal, the formidable appearance of the male bear killed on the 5th added to the difficulty with which they die when even shot through the vital parts, has staggered the resolution (of) several of them, others however seem keen for action with the bear; I expect these gentlemen will give us some amusement sho(r)tly as they (the bears) soon begin now to coppolate. saw a great quantity of game of every species common here. Capt Clark walked on shore and killed two Elk; they were not in very good order, we therefore took a part of the meat only; it is now only amusement for Capt. C. and myself to kill as much meat as the party can consum.

"Tuesday May 14th 1805 one of the party wounded a brown (grizzly) bear very badly, but being alone did not think proper to pursue him. In the evening the men in two of the rear canoes discovered a large brown bear lying in the open grounds about 300 paces from the river, and six of them went out to attack him, all good hunters; they took the advantage of a small eminence which concealed them and got within 40 paces of him unperceived, two of them reserved their fires as has been previously conscerted, the four others fired nearly at the same time and put each his bullet through him, two of the balls passed through the bulk of both lobes of his lungs, in an instant this monster ran at them with open mouth, the two who had reserved

their fir(e)s discharged their pieces at him as he came towards them, boath of them struck him, one only slightly and the other fortunately broke his shoulder, this however only retarded his motion for a moment only, the men unable to reload their guns took to flight, the bear pursued and had very nearly overtaken them before they reached the river; two of the party betook themselves to a canoe and the others seperated and(d) concealed themselves among the willows, reloaded their pieces, each discharged his piece at him as they had an opportunity they struck him several times again but the guns served only to direct the bear to them, in this manner he pursued two of them seperately so close that they were obliged to throw aside their guns and pouches and throw themselves into the river altho the bank was nearly twenty feet perpendicular; so enraged was this animal that he plunged into the river only a few feet behind the second man he had compelled (to) take refuge in the water, when one of those who still remained on shore shot him through the head and finally killed him; they then took him on shore and butcher(ed) him when they found eight balls had passed through him in different directions; the bear being old the flesh was indifferent, they therefore only took the skin and fleece, the latter made us several gallons of oil.

"I descended the hill and directed my course to the bend of the Missouri near which there was a herd of at

least a thousand buffaloe; here I thought it would be well to kill a buffaloe and leave him untill my return from the river and if I then found that I had not time to get back to camp this evening to remain all night here there being a few sticks of drift wood lying along shore which would answer for my fire and a few s(c)attering cottonwood trees a few hundred yards below which would afford me at least the semblance of a shelter. under this impression I scelected a fat buffaloe and shot him very well, through the lungs; while I was gazing attentively on the poor anamai discharging blood in streams from his mouth and nostrils, expecting him to fall every instant, and having entirely forgotten to reload my rifle, a large white, or reather brown bear, had perceived and crept on me within 20 steps before I discovered him; in the first moment I drew up my gun to shoot, but at the same instant recolected that she was not loaded and that he was too near for me to hope to perform this operation before he reached me, as he was then briskly advancing on me; it was an open level plain, not a bush within miles nor a tree within less than three hundred yards of me; the river bank was sloping and not more than three feet above the level of the water; in short there was no place by means of which I could conceal myself from this monster untill I could charge my rifle; in this situation I thought of retreating in a brisk walk as fast as he was advancing untill I could reach a tree about 300 yards

below me, but I had no sooner terned myself about but he pitched at me, open mouthed and full speed, I ran about 80 yards and found he gained on me fast I, then run into the water the idea struk me to get into the water to such debth that I could stand and he would be obliged to swim, and that I could in that situation defend myself with my espon-toon; accordingly I ran haistily into the water about waist deep, and faced about and presented the point of my espontoon, at this instant he arrived at the edge of the water within about 20 feet of me; the moment I put myself in this attitude of defence he sudonly wheeled about as if frightened, declined to combat on such unequal grounds and retreated with quite as great precipitation as he had just before pursued me.

"As soon as I saw him run in that manner I returned to the shore and charged my gun, which I had still retained in my hand through this curious adventure. I saw him run through the level open plain about three miles, till he disappeared in the woods on medecine river; during the whole of this distance he ran at full speed, sometimes appearing to look behind him as if he expected pursuit. I now began to reflect on this novil occurence and indeavoured to account for this sudden retreat of the bear. I at first thought that perhaps he had not smelt me before he arrived at the waters edge so near me, but I then reflected that he had pursued me for about 80 or 90 yards before I took the water and on examina-



Historically, grizzlies were principally oriented to the east slopes of the Rockies.

—Photo Courtesy of Montana Historical Society

tion saw the grownd torn with his tallons immediately on the imp(r)ession of my steps; and the cause of his allarm still remains with me misterious and unaccountable. So it was and I felt myself not a little gratified that he had declined the combat. my gun reloaded I felt confidence once more in my strength.

"in returning through the level bottom of Medecine River and about 200 yards distant from the Missouri, my direction led me directly to an animal that I at first supposed was a wolf; but on nearer approach or about sixty paces distant I discovered that it was not, it's colour was a brownish yellow; it was standing near it's burrow, and when I approached it thus nearly, it couched itself down like a cat looking immedi-

ately at me as if it designed to spring on me. I took aim at it and fired, it instantly disappeared in its burrow; I loaded my gun and ex(α)mined the place which was dusty and saw the track from which I am still further convinced that it was of the tiger kind. whether I struck it or not I could not determine, but I am almost confident that I did; my gun is true and I had a steady rest by means of my espontoon, which I have found very serviceable to me in this way in the open plains. It now seemed to me that all the beasts of the neighbourhood had made a league to destroy me, or that some fortune was disposed to amuse herself at my expence, for I had not proceded more than three hundred yards from the burrow of this tyger cat, before three

bull buffaloe, which wer feeding with a large herd about half a mile from me on my left, seperated from the herd and ran full speed towards me, I thought at least to give them some amusement and altered my direction to meet them; when they arrived within a hundred yards they mad(e) a halt, took a good view of me and retreated with precipitation. I then continued my rout homewards..."

The final mention of this early account of the western grizzly, we leave to Bernard DeVoto. It proves only one point. Historically, during the entire period of exploration and early settlement, probably as late as the first major rush for gold in Montana Territory in the early 1860's, the grizzly was principally oriented to the east slope of the Rockies. But it is important to note that he was not, fundamentally, a mountain animal. The encroachment of civilization caused the grizzly to constantly go further and further away from the (for him) damnable smell of man and his machinations. Lewis and Clark noted huge numbers of grizzlies in the area of the Great Falls of the Missouri, feasting on the broken carcasses of countless buffalo, killed or drowned there by the dangerous cut banks and swift waterfalls. Thereafter they did not mention another grizzly on the long trek to the Pacific

and back—until they again returned to Montana soil on the return journey to St. Louis.

The final words are those of DeVoto in his brilliant editing which appear in his THE JOURNALS OF LEWIS AND CLARK (Houghton, Mifflin Company, Boston, 1953):

"On his way to the Great Falls Lewis had noted the abundance of buffalo and grizzlies. One herd of the former, Clark said, numbered ten thousand, and there were so many of the latter and they became so "troublesome that I (Lewis) do not think it prudent to send one man alone on an errand of any kind." One (grizzly) charged Joseph Fields and he was able to escape only by leaping into the river and crouching under an overhanging bank. Another chased Drewyer for a hundred yards after he had shot it through the heart. But all this game—there were large herds of elk and antelope as well—meant that the party lived high. After leaving the Missouri, especially in the Bitterroot Mountains where there was no game at all and along the Columbia where they had to live on salmon, they were to remember this area with the longing of hungry men. The captains were prepared for the short rations to come, having been told by the Minnetarees that there were no buffalo (or grizzlies) west of the mountains."

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